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EXAMINER
MA, JOHNNY

ART UNIT	PAPER NUMBER
2614	

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10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/824,531	HENNENHOEFER ET AL.
	Examiner	Art Unit
	Johnny Ma	2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *07 March 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

2. Applicant's arguments filed 3/7/2003 have been fully considered but they are not persuasive.

Regarding claim 1, applicant respectfully submitted that Fuhrman fails to at least teach, or disclose the claimed IP digital data. Furthermore applicant respectfully submitted at least those portions of the Fuhrman reference cited in the previous Office action failed to teach, or suggest for that matter, that single frequency carrier RF signals are modulated using IP digital data – as Fuhrman explicitly teaches the use of TDMA streams, for example. However, the Fuhrmann reference discloses FIG. 55 is a more detailed block diagram of the circuitry inside blocks 1370 and 1372 in FIG. 51. In the embodiment shown, the other head end equipment block 1370 includes a conventionally designed router 1371 which couples a TCP/IP protocol wide area network such as the internet, represented by line 1373. The router communicates bi-directionally with SAR 1375 via bus 1377. Downstream data entering the SAR on bus 1377 contains data which gives the destination address of the destination peripheral coupled to the destination CPE to which the data is directed or of the destination software process in execution on a computer coupled to the destination CPE (or the Ethernet address of the destination peripheral or destination software process) (59:12-24). The Fuhrmann reference also discloses the SAR disassembles incoming packets on buses 1377 in internet protocol format and

disassembles incoming packet on bus 1379 in Ethernet protocol format or other format and reassembles incoming standard OC3 ATM protocol cells with 5 byte headers for output on bus 1374 as an OC3 data stream (59:32-37). The Fuhrmann reference also discloses after SCDMA encoding and QAM modulation, the resulting RF signal is output on line 1016 to an RF up/down converter 1018 for conversion to the proper downstream frequency band and output on HFC link 1000 (60:23-26).

Regarding claim 2, applicant traverses examiner's assertion that coaxial cable is recognized as a wiring choice in the 568 wiring standard. Rather, Applicant believes that while the EIA/TIA-568 standard may refer to unshielded or shielded twisted pair (UTP or STP) or multimode or single mode fiber for use in backbones, and UTP and STP and fiber for use in horizontal cabling, it does not expressly teach the use of coax. Furthermore applicant respectfully traverses this assertion, and request the Examiner cite a reference in support of his position that coaxial cabling is a recognized choice of 568 wiring standard pursuant to MPEP 2144.03, par. 2. The Standards of Communications Cabling – Appendix A discloses the EIA/TIA-568 wiring standard recognizes four (4) cable types and two (2) telecommunications outlets. Furthermore, the Standards of Communications Cabling – Appendix A discloses there are four types of cables that are recognized in the horizontal wiring system. These cables include:

a. Four-pair 100 ohm unshielded twisted pair (UTP) cables (10.2.1)

b. Two-pair 150 ohm unshielded twisted pair (UTP) cables (10.2.2)

c. **50-ohm Coaxial Cable (10.2.3)**

d. Fiber Optic Cable – 62.5/125 um (10.2.4)

(see EIA/TIA-568+TSB-40 Implementation). Please also refer to response to arguments presented regarding claim 1.

Regarding claim 2-5, please refer to the response to arguments presented for claim 1.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuhrmann (US 5,745,837).

As to claim 1, the claimed wideband signal distribution system for distributing a plurality of non-IP, RF modulated signals; and, at least one intelligent device for modulating single frequency carrier RF signals using IP digital data and distributing said modulated single frequency RF signals onto said wideband signal distribution system. The Fuhrmann reference discloses a method and apparatus for carrying an ATM communication protocol on a hybrid fiber coax CATV system (2:60-61) comprises a superframe structure used by the PHY layer to communicate via SCDMA over the shared HFC or the CATV plant has a data rate of 10 megabits/second (Fuhrmann 42:37-46). The up/down converter then translates the frequency of the downstream signal to the appropriate frequency to avoid interfering with either the CATV television programming channels and the upstream data coming from the CPEs (38:48-52), where the CATV television programming channels are non-IP, RF modulated signals. The

Fuhrmann reference also discloses the CU system is comprised of a SAR circuit 1002 which is coupled to a plurality of devices and other networks that supply data for transmission to the CPEs and which receive data from the CPEs (35:57-60). The Fuhrmann reference also discloses FIG. 55 is a more detailed block diagram of the circuitry inside blocks 1370 and 1372 in FIG. 51. In the embodiment shown, the other head end equipment block 1370 includes a conventionally designed router 1371 which couples a TCP/IP protocol wide area network such as the internet, represented by line 1373. The router communicates bi-directionally with SAR 1375 via bus 1377. Downstream data entering the SAR on bus 1377 contains data which gives the destination address of the destination peripheral coupled to the destination CPE to which the data is directed or of the destination software process in execution on a computer coupled to the destination CPE (or the Ethernet address of the destination peripheral or destination software process) (59:12-24). The Fuhrmann reference also discloses the SAR disassembles incoming packets on buses 1377 in internet protocol format and disassembles incoming packet on bus 1379 in Ethernet protocol format or other format and reassembles incoming standard OC3 ATM protocol cells with 5 byte headers for output on bus 1374 as an OC3 data stream (59:32-37). The Fuhrmann reference also discloses after SCDMA encoding and QAM modulation, the resulting RF signal is output on line 1016 to an RF up/down converter 1018 for conversion to the proper downstream frequency band and output on HFC link 1000 (60:23-26).

As to claim 2, the claimed wideband signal distribution system including 568 standard wiring for distributing a plurality of non-IP, RF modulated signals and; and, at least one intelligent device for demodulating single frequency carrier RF signals off of said wideband signal distribution system, wherein said single frequency RF signals comprise IP digital

information. The Fuhrmann reference discloses a method and apparatus for carrying an ATM communication protocol on a hybrid fiber coax CATV system (2:60-61) comprises a superframe structure used by the PHY layer to communicate via SCDMA over the shared HFC or the CATV plant has a data rate of 10 megabits/second (42:37-46). The Fuhrmann reference also discloses throughout this example, the conductors of the distribution system have been referred to as coaxial cable. Those skilled in the art will appreciate that with suitable adjustments of the frequencies of operation and addition of appropriate transmit and receive circuitry, one or more of the various coaxial cable links described herein could be fiber optic cable, microwave links, radio frequency links, etc. since the medium of transmission is not critical to the invention (11:64-67; 12:1-5) note fiber optic cable is recognized as a cabling choice in the 568 wiring standard. The Fuhrmann reference also discloses the up/down converter then translates the frequency of the downstream signal to the appropriate frequency to avoid interfering with either the CATV television programming channels and the upstream data coming from the CPEs (38:48-52), where the CATV television programming channels are non-IP, RF modulated signals. The Fuhrmann reference also discloses FIG. 55 is a more detailed block diagram of the circuitry inside blocks 1370 and 1372 in FIG. 51. In the embodiment shown, the other head end equipment block 1370 includes a conventionally designed router 1371 which couples a TCP/IP protocol wide area network such as the internet (59:12-16). The Fuhrmann reference also discloses the SAR disassembles incoming packets on buses 1377 in internet protocol format and disassembles incoming packet on bus 1379 in Ethernet protocol format or other format and reassembles incoming standard OC3 ATM protocol cells with 5 byte headers for output on bus

1374 as an OC3 data stream (59:32-37). The RF signals transmitted by the head end are received at each CPE modem, of which modems 1380 and 1382 are typical (60:27-29).

As to claim 3, the claimed receiver and sender intelligent device system for use with a wideband distribution network for distributing a plurality of non-IP, RF modulated signal portions and IP digital information signal portions using a plurality of RF carriers, said system comprising: at least one addressable device having at least one input and at least one output; at least one intelligent device communicatively coupled with said at least one addressable device to communicate therewith a single carrier frequency RF signal carrying at least the IP digital signal portion thereon; and, a COS identification processor for determining a quality of service needed for said IP digital signal portion, and selecting a suitable one of said RF carriers based on the determined quality of service. The Fuhrmann reference discloses a method and apparatus for carrying an ATM communication protocol on a hybrid fiber coax CATV system (2:60-61) comprises a superframe structure used by the PHY layer to communicate via SCDMA over the shared HFC or the CATV plant has a data rate of 10 megabits/second (42:37-46). The Fuhrmann reference also discloses FIG. 55 is a more detailed block diagram of the circuitry inside blocks 1370 and 1372 in FIG. 51. In the embodiment shown, the other head end equipment block 1370 includes a conventionally designed router 1371 which couples to a TCP/IP protocol wide area network such as the internet, represented by line 1373. The router communicates bi-directionally with SAR 1375 via bus 1377. Downstream data entering the SAR on bus 1377 contains data which gives the destination address of the destination peripheral coupled to the destination CPE to which the data is directed or of the destination software process in execution on a computer coupled to the destination CPE (or the Ethernet address of the destination peripheral or

destination software process) (59:12-24). The RF signals transmitted by the head end are received at each CPE modem, of which modems 1380 and 1382 are typical (60:27-29). In the upstream direction, the SARs at the CPEs disassemble incoming Ethernet packets from the Ethernet hubs and reassemble and output standard ATM cells for transmission in Utopia format to the formatters (60:55-59). In the downstream direction, the SARs receive optimized 2 byte header ATM cells on bus 1408 from the formatters, disassemble them and reassemble Ethernet packets and store them in memory 1404 via DMA transactions (60:64-67). The Fuhrmann reference also discloses single frequency carrier RF signals comprising digital information where a modulator/transmitter converts the digital data in the data stream arriving on bus into amplitude modulations of a carrier signal (Fuhrmann 8:47-50). The Fuhrmann reference also discloses a class of service identification processor to determine quality of service needed for a IP digital signal portion where ATM Quality of Service guarantees or guaranteed bandwidth availability is implemented by controlling the code space at the media access control layer (Fuhrmann 3:14-16) and each channel which can carry digital data encoding some service such as internet access (Fuhrmann 22:19-21). Fuhrmann does not explicitly mention a Class of Service identification processor but it is nonetheless inherent to the system. The Fuhrmann reference also discloses the processor selecting a suitable one of said RF carriers based on the determined quality of service where Fuhrmann also discloses one type of error recovery that can be used is to send a message in the downstream data telling the CE that has lost synchronization to resynchronize (Fuhrmann 55: 14-17). Where a control sequence controls the frequency of a local beat frequency oscillator for receiver and is synchronized with the code sequence fed to the transmitter for the channel (Fuhrmann 12:29-36).

As to claim 4, the claimed wideband signal distribution system for distributing said RF modulated carriers over said network; at least one intelligent device communicatively coupled to said distribution system for modulating single frequency carrier RF signals using IP digital data and distributing said modulated single frequency RF signals onto said wideband signal distribution system; wherein said at least one intelligent device uses an existing media control access layer of the network in order to control the sharing of media channels among multiple addressable devices in the system. The Fuhrmann reference discloses a method and apparatus for carrying an ATM communication protocol on a hybrid fiber coax CATV system (2:60-61) comprises a superframe structure used by the PHY layer to communicate via SCDMA over the shared HFC or the CATV plant has a data rate of 10 megabits/second (Fuhrmann 42:37-46). The up/down converter then translates the frequency of the downstream signal to the appropriate frequency to avoid interfering with either the CATV television programming channels and the upstream data coming from the CPEs (38:48-52), where the CATV television programming channels are non-IP, RF modulated signals. The Fuhrmann reference also discloses the CU system is comprised of a SAR circuit 1002 which is coupled to a plurality of devices and other networks that supply data for transmission to the CPEs and which receive data from the CPEs (35:57-60). The Fuhrmann reference also discloses FIG. 55 is a more detailed block diagram of the circuitry inside blocks 1370 and 1372 in FIG. 51. In the embodiment shown, the other head end equipment block 1370 includes a conventionally designed router 1371 which couples a TCP/IP protocol wide area network such as the internet, represented by line 1373. The router communicates bi-directionally with SAR 1375 via bus 1377. Downstream data entering the SAR on bus 1377 contains data which gives the destination address of the destination peripheral

coupled to the destination CPE to which the data is directed or of the destination software process in execution on a computer coupled to the destination CPE (or the Ethernet address of the destination peripheral or destination software process) (59:12-24). The Fuhrmann reference also discloses the SAR disassembles incoming packets on buses 1377 in internet protocol format and disassembles incoming packet on bus 1379 in Ethernet protocol format or other format and reassembles incoming standard OC3 ATM protocol cells with 5 byte headers for output on bus 1374 as an OC3 data stream (59:32-37). The Fuhrmann reference also discloses after SCDMA encoding and QAM modulation, the resulting RF signal is output on line 1016 to an RF up/down converter 1018 for conversion to the proper downstream frequency band and output on HFC link 1000 (60:23-26). The Fuhrmann reference also discloses wherein said at least one intelligent device uses an existing media control access layer of the network in order to control the sharing of media channels among multiple addressable devices in the system where the CPU's perform the media access control algorithm in reading how much data each CPE has sent and received in the last 10 milliseconds, generating and arbitrating access requests, resolving contentions on the access channels, assigning channels etc (40:34-38).

As to claim 5, the claimed wideband signal distribution system for distributing a plurality of non-IP, RF modulated signals; at least one intelligent device for demodulating single frequency carrier RF signals off of said wideband signal distribution system, wherein said single frequency carrier RF signals comprise IP digital information; wherein said at least one intelligent device uses an existing media control access layer of the network in order to control the sharing of media channels among multiple addressable devices in the system. The Fuhrmann reference discloses a method and apparatus for carrying an ATM communication protocol on a hybrid fiber

coax CATV system (2:60-61) comprises a superframe structure used by the PHY layer to communicate via SCDMA over the shared HFC or the CATV plant has a data rate of 10 megabits/second (Fuhrmann 42:37-46). The up/down converter then translates the frequency of the downstream signal to the appropriate frequency to avoid interfering with either the CATV television programming channels and the upstream data coming from the CPEs (38:48-52), where the CATV television programming channels are non-IP, RF modulated signals. The Fuhrmann reference also discloses the function of the receivers is to demodulate the received signals (11:1-3). The Fuhrmann reference also discloses the CU system is comprised of a SAR circuit 1002 which is coupled to a plurality of devices and other networks that supply data for transmission to the CPEs and which receive data from the CPEs (35:57-60). The Fuhrmann reference also discloses FIG. 55 is a more detailed block diagram of the circuitry inside blocks 1370 and 1372 in FIG. 51. In the embodiment shown, the other head end equipment block 1370 includes a conventionally designed router 1371 which couples a TCP/IP protocol wide area network such as the internet, represented by line 1373. The router communicates bi-directionally with SAR 1375 via bus 1377. Downstream data entering the SAR on bus 1377 contains data which gives the destination address of the destination peripheral coupled to the destination CPE to which the data is directed or of the destination software process in execution on a computer coupled to the destination CPE (or the Ethernet address of the destination peripheral or destination software process) (59:12-24). The Fuhrmann reference also discloses the SAR disassembles incoming packets on buses 1377 in internet protocol format and disassembles incoming packet on bus 1379 in Ethernet protocol format or other format and reassembles incoming standard OC3 ATM protocol cells with 5 byte headers for output on bus 1374 as an

OC3 data stream (59:32-37). The Fuhrmann reference also discloses after SCDMA encoding and QAM modulation, the resulting RF signal is output on line 1016 to an RF up/down converter 1018 for conversion to the proper downstream frequency band and output on HFC link 1000 (60:23-26). The Fuhrmann reference also discloses wherein said at least one intelligent device uses an existing media control access layer of the network in order to control the sharing of media channels among multiple addressable devices in the system where the CPU's perform the media access control algorithm in reading how much data each CPE has sent and received in the last 10 milliseconds, generating and arbitrating access requests, resolving contentions on the access channels, assigning channels etc (40:34-38).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnny Ma whose telephone number is (703) 305-8099. The examiner can normally be reached on 8:00 am - 6:00 pm (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5399 for regular communications and (703) 308-5399 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

jm
May 19, 2003

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600